

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10022 (1981): Open Ended Cogged V-Belting [PGD 31:
Bolts, Nuts and Fasteners Accessories]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

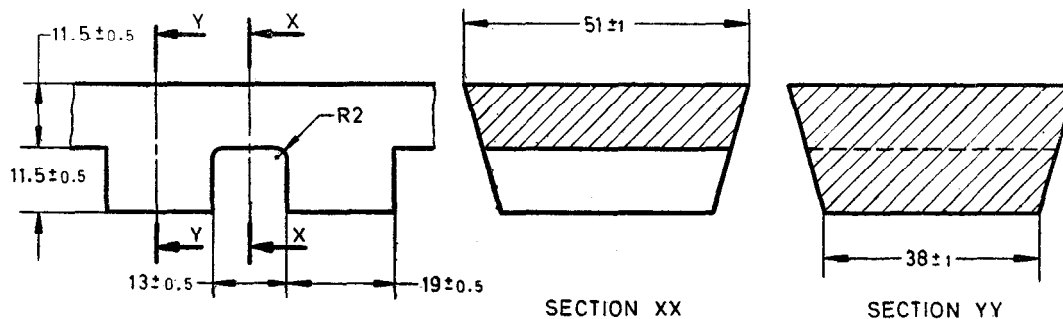
SPECIFICATION FOR OPEN ENDED COGGED V-BELTING

1. Scope — Covers cogged V-belts used for driving the gear box of the electrical generator from the axle of the fully air-conditioned coaches and similar other applications.

1.1 A typical illustration about the use of these belts is indicated in Appendix A.

2. Dimensions

2.1 The belting shall consist of a main body of V section with built-in cogs at interval of 13 mm in between the cogs as shown below:



2.2 Length of Belting — The total length of belting required shall be specified by the purchaser in the enquiry or order.

2.2.1 A tolerance of $+2_{-0.5}$ percent shall be allowed on the length.

3. Material — The body of the belting shall be made of cord and fabric and shall be rubber impregnated and be adequate to transmit required amount of power.

4. Construction — It is recommended that the tooth shall be of preformed-built in cogs of solid construction covered by a fabric jacket of adequate size and of a proper material to withstand the specified duty.

5. Stretch — The maximum operational stretch shall be as agreed to between the purchaser and the supplier.

6. Sampling

6.1 Unless otherwise agreed to between the purchaser and the manufacturer the procedure given in IS : 2500 (Part I)-1973 'Inspection by attributes and by count of defects (*first revision*)' shall be followed for sampling inspection. The inspection level and AQL for various characteristics are given in 6.1.1 and 6.1.2.

6.1.1 For dimension, the single sampling plan inspection level III and AQL 2.5% given in Tables 1 and 2 of IS : 2500 (Part I)-1973 shall be followed.

6.1.2 For inspection for stretch and tests given in 7, the single sampling plan with inspection level I and AQL 1% given in IS : 2500 (Part I)-1973 shall be followed.

7. Tests

7.1 Tensile and Elongation Test — The average tensile strength of the finished belting when tested in the manner as described in Appendix B shall be not less than 14.7 kN and elongation at a load of 4.9 kN shall be a maximum of 5 percent. For obtaining the average value, three samples shall be taken. The minimum tensile strength at break for individual sample shall not be less than 12.8 kN.

7.2 Adhesion Test — The adhesion between different layers that is between fabric to fabric and fabric to cord, when tested in the manner as described in Appendix C of IS : 1370-1976 'Friction surface rubber transmission belting (*second revision*)' shall be not less than 43 N per 10 mm width.

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Gr. 2

8. Marking — The belting shall be marked with the following information:

- a) Manufacturers trade-mark and identification,
- b) Any other trade-mark required by the purchaser, and
- c) Year of manufacture.

8.1 ISI Certification Marking — Details available with the Indian Standards Institution.

9. Packing — The belting shall be packed in rolls in suitable lengths and shall be provided with labels furnishing the following:

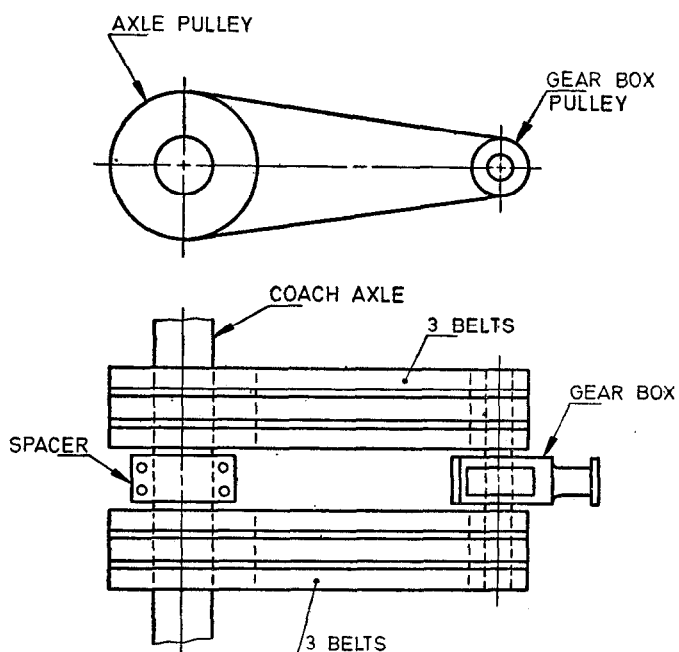
- a) Name of manufacturer and trade-mark,
- b) Length, and
- c) Year of manufacture.

9.1 Each roll shall be packed suitably in a manner to avoid damage in transit.

APPENDIX A

(Clause 1.1)

PARTICULARS OF DRIVE FOR FULLY AIR-CONDITIONED COACHES



1. Axle pulley: Diameter	612 mm
Width	178 mm
2. Gear box pulley: Diameter	266 mm
Width	178 mm
3. Centre distance between the pulleys	1 225 mm
4. Gear box ratio	1 : 1·97
5. Power to be transmitted	25 kW
6. Minimum speed for full output	850 rpm
7. Cut in speed	750 rpm
8. Maximum speed to be encountered	2 700 rpm

A P P E N D I X B

(Clause 7.1)

DETERMINATION OF TENSILE STRENGTH AND ELONGATION**B-1. Test Pieces**

B-1.1 The test pieces shall be cut so as to contain no joint. The belting sample shall be not less than 330 mm long and free length between the grips shall be 200 mm.

B-2. Preparation and Conditioning of the Test Pieces

B-2.1 The test pieces shall be cut not less than 5 days from the date of the manufacture of the belt and test pieces shall be conditioned for 3 days at $27 \pm 2^\circ\text{C}$ and 65 ± 5 percent relative humidity. Conditioning may be increased to a maximum of 14 days when agreed between the manufacturer and the purchaser.

B-3. Apparatus

B-3.1 The accuracy of the tensile testing machine shall be within ± 1 percent.

B-3.2 The range of the machine shall be so chosen, that the loads to be measured fall within 20 percent and 80 percent of the full scale deflection.

B-3.3 The load shall be applied smoothly and the rate of traverse of the driven grip shall be 100 mm/min.

B-3.4 The method of holding the test pieces shall be such as to ensure proper alignment of the test pieces eliminating slip or damage during testing. The use of transverse serrated grips is permissible. The grips shall be free to move without undue friction and incorrect alignment.

B-4. Procedure

B-4.1 The reference lines shall be marked 180 mm apart and the test piece shall be placed in the grips or jaws of the machine and shall be carefully positioned in line with front edge of the jaws and the axis of the test piece coinciding with the centre line of the jaws.

B-4.2 The machine shall be started and the driven jaw traversed at the specified rate until rupture of the test piece occurs, at which point the maximum load applied shall be noted.

B-4.3 The results of breaks securing outside the reference lines on the test piece shall normally be discarded, but if results of such tests are required they shall be recorded as 'jaw-breaks'.

B-4.4 The elongation shall be determined by measuring the distance between the reference lines at specified load.

B-5. Results

B-5.1 The tensile strength of each test piece shall be recorded in kN and the mean of the three test values shall also be recorded.

B-5.2 The elongation values in the longitudinal direction shall be expressed as a percentage of the initial distance between the reference lines. The mean the three test values shall be recorded.

E X P L A N A T O R Y N O T E

This Indian Standard lays down the requirements for open ended cogged V-belting used for fully airconditioned coaches of Indian Railways and provide link between the driving arrangement for the generator and the coach axle and similar other applications.

In case the consignment is meant for Indian Railways, the manufacturer shall also mark the insignia as given in IS : 6583-1972 'Specification for train lighting belting' of the Indian Railways and name of the manufacturer and the year of the manufacture be vulcanised at intervals of not more than 2 metres of belting.

While preparing this standard, assistance has been derived from the Indian Railways Specification IRS : E 39-75 'Specification for cogged V-belting' issued by the Ministry of Railways.